

## Contents of *Ecological Modelling*, Vol. 73

VOL. 73 NOS. 1,2

MAY 1994

Information theoretical approach to comparative study of lakes	
I. Aoki (Osaka, Japan) . . . . .	1
Modelling structural dynamical changes in a Danish shallow lake	
S.N. Nielsen (Roskilde, Denmark) . . . . .	13
A framework for modeling microbial transport and dynamics in the subsurface	
C. Loehle (Argonne, IL, USA) and P. Johnson (East Lansing, MI, USA) . . . . .	31
A functional approach to efficient nitrogen use in crop production	
C.W. Honeycutt, W.M. Clapham and S.S. Leach (Orono, ME, USA) . . . . .	51
Mathematical simulation of $C_4$ grass photosynthesis in ambient and elevated $CO_2$	
D.-X. Chen, M.B. Coughenour (Fort Collins, CO, USA), A.K. Knapp and C.E. Owensby (Manhattan, KS, USA) . . . . .	63
Density-dependent regulation of population number and life-history evolution: Optimization of age at maturity in a simple allocation model for annuals and biennials	
J. Kozłowski and M. Janczur (Kraków, Poland) . . . . .	81
An integrated rate methodology (IRM) for multi-factor growth rate modelling	
H. Wu, E.J. Rykiel Jr. (College Station, TX, USA), T. Hatton and J. Walker (Canberra, Australia) . . . . .	97
Determining strategies for the biological control of a sugarcane stalk borer	
J.W. Hearne, L.M. Van Coller (Pietermaritzburg, South Africa) and D.E. Conlong (Mt Edgecombe, South Africa) . . . . .	117
The qualitative behavior of coupled predator–prey oscillations as deduced from simple circle maps	
J. Vandermeer (Ann Arbor, MI, USA) . . . . .	135
Spider venom and eco-ethological implications: a simple mathematical model	
J.-L. Boeyé and C. Meier (Bern, Switzerland) . . . . .	149
<b>Short Communication</b>	
The Kalman filter model and Bayesian outlier detection for time series analysis of BOD data	
R.C. Tiwari and T.P. Dienes (Charlotte, NC, USA) . . . . .	159

**Erratum**

A model for the processes regulating recruitment for a sockeye salmon stock (Ecological Modelling, 71: 85-106 (1994))

R.N. Crittenden ..... 167

VOL. 73 NOS. 3,4

JUNE 1994

Estimating the parameters of dissolved oxygen dynamics in shallow ponds V. Ginot and J.-C. Hervé (Villeurbanne, France) .....	169
Host-parasitoid interactions in an agricultural ecosystem: a computer simulation J.A. Axelsen (Aarhus, Denmark) .....	189
Formation of a dissipative structure: a nonlinear analysis J. Chattopadhyay, P.K. Tapaswi, D. Datta (Calcutta, India) and D. Chattopadhyay (Agarpara, India) .....	205
Emergy use, environmental loading and sustainability. An emergy analysis of Italy S. Ulgiati (Siena, Italy), H.T. Odum (Gainesville, FL, USA) and S. Bastianoni (Siena, Italy) .....	215
Exchange of information in natural hierarchical systems Yu.B. Kirsta (Barnaul, Russian Federation) .....	269
Simulating colonization by exotic species: a model of the red imported fire ant ( <i>Solenopsis invicta</i> ) in North America R.L. Stoker, D.K. Ferris, W.E. Grant and L.J. Folse (College Station, TX, USA) ..	281
A simulation model of helicopter disturbance of molting Pacific black brant M.W. Miller, K.C. Jensen, W.E. Grant and M.W. Weller (College Station, TX, USA) .....	293
Landscape habitat diversity: a multiscale information theory approach C. Loehle (Argonne, IL, USA) and G. Wein (Memphis, TN, USA) .....	311
<b>Key Word Index</b> .....	331
<b>Author Index</b> .....	332
<b>Contents of Ecological Modelling Vol. 73</b> .....	333

